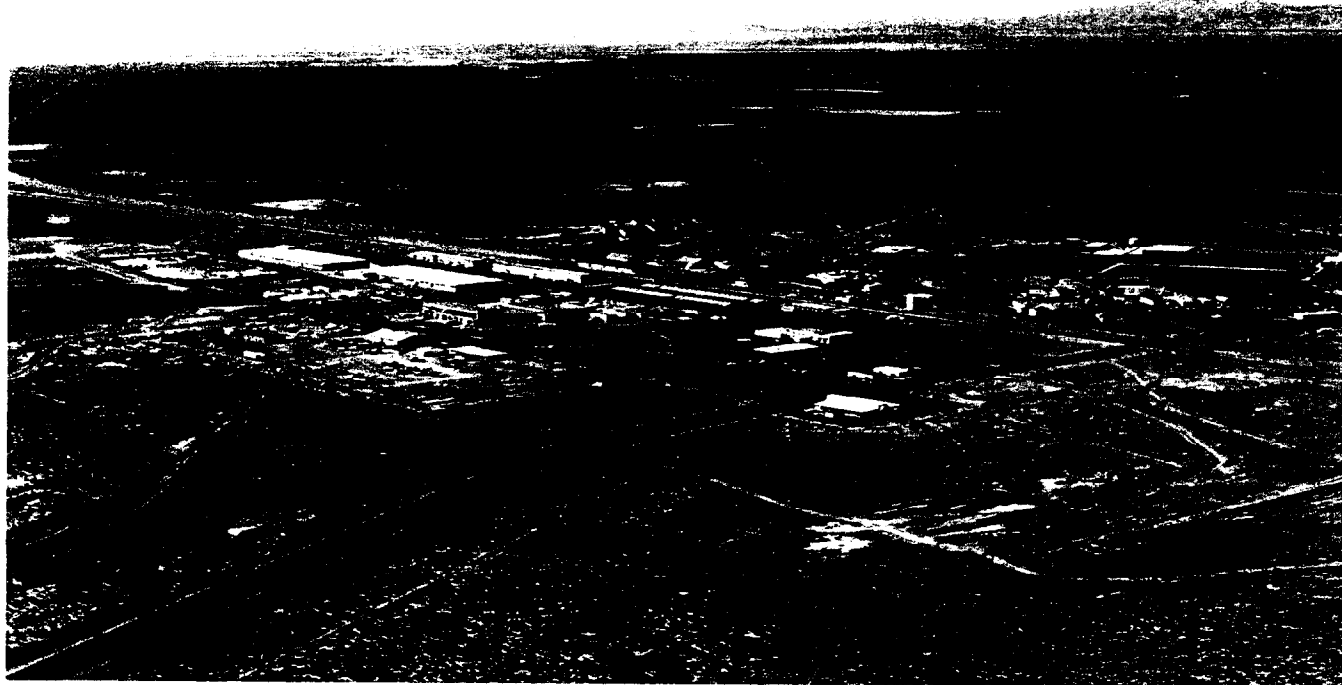




IDAHO DEPARTMENT
OF HEALTH AND
WELFARE

DIVISION OF
ENVIRONMENTAL
QUALITY

Final Comprehensive Record of Decision for Central Facilities Area Operable Unit 4-13



Idaho National Engineering and Environmental Laboratory
Idaho Falls, Idaho

DOE/ID-10719
Revision 2

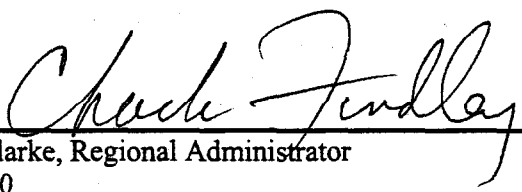
**Final Comprehensive
Record of Decision
Central Facilities Area
Operable Unit 4-13**

Published July 2000

**Idaho National Engineering and Environmental Laboratory
Idaho Falls, Idaho**

U.S. ENVIRONMENTAL PROTECTION AGENCY SIGNATURE SHEET

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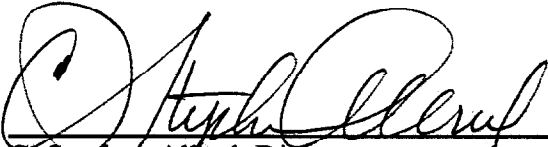

for Chuck Clarke, Regional Administrator
Region 10
U.S. Environmental Protection Agency

7-14-00

Date

IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY SIGNATURE SHEET

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C. Stephen Alfred, Director
Department of Environmental Quality

7-18-2000

Date

U.S. DEPARTMENT OF ENERGY IDAHO OPERATIONS OFFICE SIGNATURE SHEET

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Beverly A Cook

7/31/00

Beverly A. Cook, Manager

Date

U.S. Department of Energy Idaho Operations Office

PART I—DECLARATION OF THE RECORD OF DECISION

Site Names and Location

Central Facilities Area

Waste Area Group 4 Comprehensive Remedial Investigation/Feasibility Study, Operable Unit 4-13
Incorporating 52 individual sites in Operable Units 4-1 through 4-13
Idaho National Engineering and Environmental Laboratory
CERCLIS ID No. 4890008952; CERCLA Site ID No. 1000305
Idaho Falls, Idaho

Statement of Basis and Purpose

This Record of Decision (ROD) presents the selected remedy for Waste Area Group (WAG) 4 at the Idaho National Engineering and Environmental Laboratory (INEEL). The selected remedy comprises remedial action at three individual sites and outlines limited action institutional controls that will be implemented at one of the remediated sites and one other site. Components of the selected remedy were selected in accordance with the requirements of the *National Oil and Hazardous Substances Pollution Contingency Plan* (NCP) and the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) (42 USC 9601, et seq.) of 1980 as amended by the *Superfund Amendments and Reauthorization Act of 1986*. All documentation to support the decisions finalized in this ROD is contained in the Administrative Record for WAG 4. The selected remedy is intended to be the final action at WAG 4, the Central Facilities Area (CFA).

The U.S. Department of Energy Idaho Operations Office (DOE-ID) is lead agency for the decision. The U.S. Environmental Protection Agency (EPA), Region 10 and Idaho Department of Health and Welfare (IDHW) Division of Environmental Quality participated in the evaluation and selection of the remedial actions. The EPA approves and IDHW concurs with the selected remedy for WAG 4.

Although no unacceptable risks via groundwater were identified in the *Comprehensive Remedial Investigation/Feasibility Study for the Central Facilities Area Operable Unit 4-13* (RI/FS) (DOE-ID 1999a), a subsequent report for the Operable Unit (OU) 4-12 Post-ROD monitoring program identified that nitrate in two wells at WAG 4 was above a federal drinking water maximum contaminant level (MCL) of 10 mg/L. On this basis, the Agencies initially decided to separate OU 4-13 into two actions: OU 4-13A, which was designated an Interim Action ROD, and OU 4-13B, which was designated as the groundwater RI/FS. Therefore, the proposed plan for OU 4-13 was retitled the *OU 4-13A Interim Action Proposed Plan* when it was issued in August 1999.

Subsequent to this decision, information was gathered regarding the likely source and extent of nitrate in the wells. The most likely source has been identified as the CFA-08 Sewage Plant Drainfield. Additionally, because the nitrate levels are expected to drop below the MCL during the time period that DOE operates the facility, a higher allowable level under 40 CFR 141.11 for nitrate (20 mg/L) is protective during the DOE operational period. The average nitrate concentration in one of the subject wells is equal to the MCL; nitrate concentrations in the other well is less than the 20 mg/L allowable level and shows a downward trend. On that basis, the agencies decided to eliminate the OU 4-13B RI/FS and maintain the original name, the OU 4-13 Comprehensive ROD. Groundwater will continue to be evaluated under the Post-ROD monitoring program.

Assessment of the Site

The response action selected in this ROD is necessary to protect the public health or welfare or the environment from actual or threatened releases of hazardous substances into the environment. Such release or threat of release may present an imminent and substantial endangerment to public health, welfare, or the environment.

Description of the Selected Remedies

The Federal Facility Agreement and Consent Order (FFA/CO) (DOE-ID 1991) was developed to provide a framework and schedule for implementing CERCLA activities at the INEEL. The FFA/CO was signed by DOE-ID, EPA Region 10, and the IDHW. To facilitate the implementation of CERCLA at INEEL, the INEEL was divided into 10 WAGs. This ROD documents remedies selected for contaminated sites at WAG 4.

WAG 4 consists of 52 surface sites grouped into 13 operable unit (OUs). As designated in the FFA/CO, OU 4-13 is the *Comprehensive Remedial Investigation/Feasibility Study for the Central Facilities Area Operable Unit 4-13* (DOE-ID 1999a). An estimate of cumulative risk associated with all 52 surface sites and an evaluation of appropriate actions for those sites posing unacceptable risk was included in the OU 4-13 RI/FS. Forty-seven of these sites were determined to be no action or no further action sites (this includes a no action portion of one site, CFA-08). The selected remedies for WAG 4 comprise three remedial actions to mitigate the risk associated with three sites (one of which will require continuing institutional controls). Also limited action is required at the no further action site, CFA-07, and three previously covered sites, CFA-01, -02, and -03, to implement and continue institutional controls. Monitoring of groundwater is required to assess the downward trend of nitrate. The sites that require remedial action are the CFA-04 Pond, the CFA-08 Sewage Plant Drainfield, and CFA-10 Transformer Yard (formerly known as the Transformer Yard Oil Spills Site).

CFA-04 Pond

The CFA-04 Pond was determined to pose a threat to human health and the environment from mercury contamination. The hazard indices are 80 for human (future resident with subsistence farming) and up to 30,000 for ecological receptors (screening level). The volume of mercury-contaminated soil is estimated to be 6,338 m³ (8,290 yd³). This estimate is based on the depth to basalt in the pond bottom (max=2.4 m [8 ft]), the windblown area, and the pipeline. The remedial action selected to mitigate the threat to human health and the environment for the CFA-04 Pond is excavation and on-INEEL disposal at the proposed INEEL CERCLA Disposal Facility (ICDF). Given the volume of contaminated soil, the cost of retrieval and associated cost of disposal is more cost effective than a more intensive analysis. This remedy will consist of the following actions:

1. Characterizing the site and excavating soil from CFA-04 that exceeds the mercury final remediation goal (FRG) of 0.50 mg/kg. Soil contaminated at concentrations above the FRG will be excavated to basalt or 3m (10ft) below ground surface (bgs). No basalt will be excavated.
2. Transporting and disposing soil that exceeds the mercury FRG to the ICDF.
3. Stabilizing soil as necessary to meet ICDF Waste Acceptance Criteria.

4. Performing verification sampling to ensure that soil exceeding the FRG of 0.50 mg/kg mercury has been removed.
5. Backfilling the pond, and adjacent areas that have been excavated with uncontaminated soil to grade. All excavations will be contoured to match the surrounding terrain and revegetated.

The preamble of the NCP states that when noncontiguous facilities are reasonably close to one another, and wastes at the sites are compatible for a selected treatment or disposal approach, CERCLA section 104(d)(4) allows the lead agency to treat these related facilities as one site for response purposes; and, therefore, allows the lead agency to manage waste transferred between such noncontiguous facilities without having to obtain a permit. CFA and Idaho Nuclear Technology and Engineering Center (INTEC) will be treated as one site for response purposes because of the reasonably close proximity of the facilities and because of the compatibility of the disposal approach. Both facilities are part of INEEL. INTEC is located just two miles north of CFA and the facilities are connected by a road limited only to badged personnel. The ICDP is being designed to safely consolidate INTEC CERCLA waste and will accept CERCLA waste from other areas within INEEL. The ICDP complex will include an engineered facility meeting Resource Conservation and Recovery Act Subtitle C, Idaho Hazardous Waste Management Act and polychlorinated biphenyl landfill design and construction requirements.

CFA-08 Sewage Plant Drainfield

The CFA-08 Sewage Plant Drainfield was determined to pose a threat to humans from cesium-137 contamination. The risk to the future residential receptor from cesium-137 is $4\text{E-}04$. No environmental risks were identified. The volume of cesium-137 contaminated soil is estimated to be $56,634\text{ m}^3$ ($74,074\text{ yd}^3$). Radioactive decay will reduce the cesium-137 concentration to below the $1\text{E-}04$ (future resident) risk-based level of 2.3 pCi/g in 189 years. The remedial action selected to mitigate the threat to human health for the CFA-08 Sewage Plant Drainfield is containment of the contaminated soil area using an engineered cover. The cover will be designed to isolate low-level radioactive contaminants from human and biotic intrusion and to provide radiation shielding for a period of 189 years. Short-term remedial actions to be performed at the site include:

1. Constructing an engineered Evapotranspiration (ET) cover, using clean native soil for fill material as needed
2. Contouring and grading the surrounding terrain to direct the surface water runoff away from the cover.

The continued effectiveness of the remedy will be evaluated by monitoring soil cover integrity and performing above ground radiological surveys. Because contamination is to be left in place, institutional controls are necessary for CFA-08 to restrict access until the land can be released for unrestricted use. Institutional controls (Section 12) to be implemented at CFA-08 include:

1. Restricting access using signs and permanent markers
2. Establishing and publishing surveyed boundaries
3. Controlling activities
4. Land use controls in land leasing and property transfers.

CFA-10 Transformer Yard

Due to lead contamination, CFA-10 Transformer Yard was determined to pose a threat to human health and the environment. Lead was detected in soil at a maximum concentration of 5,560 mg/kg, which exceeds the EPA residential screening criterion of 400 mg/kg and the ecological risk level of 10 times background (170 mg/kg). The relatively small volume of lead-contaminated soil is estimated at 122 m³ (160 yd³). The remedial action selected to mitigate the threat to human health and the environment for the CFA-10 Transformer Yard site is excavation and off-INEEL disposal at a permitted Treatment, Storage, and Disposal Facility (TSDF). This remedy will consist of the following actions:

1. Characterizing the site and excavating soil from CFA-10 (OU4-09) that exceeds the lead FRG of 400 mg/kg.
2. Performing verification sampling in the excavated area to verify that soil exceeding the FRG of 400 mg/kg for lead, has been removed.
3. Stabilizing in cement, soil as necessary to ensure LDRs are met.
4. Transporting and disposing of excavated and stabilized soil to a permitted off-INEEL TSDF.
5. Backfilling areas that have been excavated with uncontaminated soil to grade. All excavations will be contoured to match the surrounding terrain and revegetated.

Statutory Determination

Statutory Requirements

The selected remedies for the CFA-04 Pond, CFA-08 Sewage Drainfield, CFA-10 Transformer Yard, No Action and No Further Action sites have been determined to protect human health and the environment, comply with federal and state requirements that are legally applicable or relevant and appropriate, and are cost-effective. These remedies use permanent solutions and alternative treatment technologies to the maximum extent practicable.

Statutory Preference for Treatment

The statutory preference for a remedy to reduce the toxicity, mobility, or volume of materials through treatment is met by the selected remedies for CFA-04 and CFA-10. Treatment will be performed by stabilizing excavated, contaminated soil as appropriate to meet the ICDF Waste Acceptance Criteria for CFA 04 and the LDRs for CFA 10.

The Agencies have decided to implement engineering controls in cases where treatment is impractical or where sites pose relatively low long-term risk. Treating contaminated soils at CFA-08 is not practical due to the large volume of soil contaminated with relatively low levels of cesium-137. The selected remedial action at CFA-08 does not meet the preference for treatment as a principal element. However, the selected remedies fulfill the Agencies preference for engineered controls in lieu of treatment.

Institutional Controls

Institutional controls (IC) or land use/access restriction will be maintained by DOE at any INEEL CERCLA site where residual contamination levels are not protective for unrestricted exposure and unlimited land use according to EPA Region 10 Policy (EPA 1999a). ICs may be discontinued if

contaminant conditions or potential risk levels are determined to be protective which will be documented during CERCLA five-year reviews.

Five-Year Review Requirements

Statutory comprehensive five-year reviews are required at sites where contamination left in place precludes unrestricted exposure and unlimited land use. Reviews will evaluate factors such as contaminant migration from sites, effective use of institutional controls, and the overall effectiveness of remedial actions. Also, reviews will assess the need for future long-term environmental monitoring and administrative/institutional controls.

RECORD OF DECISION DATA CERTIFICATION CHECKLIST

Based on Section 6.2.6 of *A Guide to Preparing Superfund Proposed Plans, Records of Decision, and Other Remedy Selection Decision Documents* (EPA 1999b), the following information is included in the Decision Summary (Part II) of this ROD:

- Contaminants of concern (COCs) and their respective concentrations
- Baseline risk assessment of the COCs
- Cleanup levels established for the COCs and the basis for the levels
- Information about principal threat wastes is not included because source materials constituting principal threats were not encountered
- Current and future land- and groundwater-use assumptions used in the baseline risk assessment and ROD
- Land and groundwater use that will be available at the Site as a result of the selected remedies
- Estimated costs for capital, operation and maintenance, and total net present value; discount rate; and the number of years over which the remedy estimates are projected
- Decisive factors that led to selecting the remedies (i.e., how the selected remedies provide the best balance of tradeoffs relative to the balancing and modifying criteria).

Supporting information on the decision process can be found in the Administrative Record for WAG 4.

U.S. DEPARTMENT OF ENERGY IDAHO OPERATIONS OFFICE SIGNATURE SHEET

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Beverly A. Cook, Manager
U.S. Department of Energy Idaho Operations Office

Date

x

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Chuck Clarke, Regional Administrator
Region 10
U.S. Environmental Protection Agency

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C. Stephen Allred, Administrator
Division of Environmental Quality
Idaho Department of Health and Welfare

Date

